

and other existing exceptions thereto.<sup>43</sup> Indeed, to the extent cable operators often serve as the major if not the sole source of funding for nascent cable programmers, the need for these exceptions is more compelling than in the broadcast ownership context where the number of start-up ventures is not nearly as great.

**a. Single Majority Shareholder Exception**

The logic underlying the single majority shareholder exception<sup>44</sup> is straightforward: Minority shareholders, even if they act in concert, are unable to direct or control the activities of a corporation where a single shareholder holds an absolute majority of the stock.<sup>45</sup> A cable operator that owns a minority interest in a cable programmer or a cable system under such circumstances has no ability to exercise control contrary to the decision made by a majority shareholder. Such a cable operator has but four alternatives -- convince the majority shareholder of the efficacy of the position it advocates, accept a contrary decision of the majority shareholder, attempt to sell

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<sup>43</sup> The single majority shareholder, debt/non-voting stock, and insulated limited partnership exceptions are discussed below. Should the Commission apply the broadcast attribution rules to the Cable Act ownership restrictions, it should also give investment companies, trusts, officers, and directors the same attribution treatment as they are accorded in the broadcast attribution rules. See note 2 to 47 C.F.R. § 73.3555 (1992).

<sup>44</sup> The exception is set forth in 47 C.F.R. § 73.3555 (1992), at note 2(b).

<sup>45</sup> See In the Matter of Reexamination of the Commission's Rules and Policies Regarding the Attribution of Ownership Interests in Broadcast, Cable Television and Newspaper Entities, 97 FCC 2d 997, 1008-9 (1984) ("1984 Attribution Order").

its interest, or attempt to buy out the majority shareholder. Its holdings are thus "meaningless in terms of influence or control because of the dominance of" another shareholder and, accordingly, its interest should not be cognizable for vertical or horizontal ownership purposes.<sup>46</sup>

**b. Debt and Non-Voting Stock Exception**

The broadcast attribution rules also contain an exception for debt and non-voting stock which provides that such interests shall not be attributed.<sup>47</sup> The Commission should retain this exception in the horizontal and vertical ownership contexts because it promotes cable operator investment in cable systems and programming without jeopardizing the efficacy of the ownership limits. Moreover, as the Commission has observed, investment in new entrants, such as those principally owned by minorities and other entrepreneurs, often takes the form of debt or non-voting stock.<sup>48</sup> Making such investment vehicles attributable could effectively foreclose a major avenue of funding for nascent programming enterprises and cable systems without producing a corresponding public benefit.

**c. Insulated Limited Partner Exception**

The Commission's broadcast attribution rules also permit a limited partner to escape attribution if it is "not materially involved, directly or indirectly, in the management or operation

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<sup>46</sup> See 1984 Attribution Order at 1008.

<sup>47</sup> See 47 C.F.R. § 73.3555, at note 2(f).

<sup>48</sup> See 1984 Attribution Order at 1020.

of the media-related activities of the partnership. . . ."<sup>49</sup>

This exemption furthers the public interest by facilitating the infusion of capital without threatening the diversity rationales that underlie the ownership restrictions.<sup>50</sup> The reasons for permitting such an exception are at least as compelling in the cable horizontal ownership context as in the broadcast ownership context. In the cable vertical ownership context, the need for such an exception is even more compelling than in the broadcast ownership context given the historical reliance of start-up cable programmers on cable operators for capital.

## **II. VERTICAL (CHANNEL OCCUPANCY) LIMIT**

### **A. A Vertical Limit Lower Than 40% Would Be Inconsistent With the Act, the Overwhelming Weight of the Record, and the Public Interest**

#### **1. Legal and Economic Analysis, As Well As Marketplace Realities, Fully Justify a Channel Occupancy Limit of At Least 40%**

In its initial Comments, TCI demonstrated that legal and economic precedent, as well as the recognized consumer benefits of vertical integration, justify allowing cable operators to dedicate a significant amount of their system capacity to affiliated programming. TCI reiterates its belief that a channel occupancy limit of at least 40% will best serve the public interest.

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<sup>49</sup> See 47 C.F.R. § 73.3555, at note 2(g)(1).

<sup>50</sup> See In Re Reexamination of the Commission's Rules and Policies Regarding the Attribution of Ownership Interests in Broadcast, Cable Television and Newspaper Entities, 58 RR2d 604, 613 (1985)

a. **The Commission's Previous Cable Act Orders,  
Particularly the Program Access Order,  
Eliminate the Need For Restrictive Vertical  
Limits**

Throughout this proceeding, TCI and others<sup>51</sup> have pointed out that the Commission's recent orders on program access, leased access, and must carry, as well as the preexisting PEG access rules, address the same fundamental issues that underlie the ownership provisions of the 1992 Cable Act. Because these previous decisions impose both behavioral and structural regulations designed to address the competitive issues at the heart of this proceeding, it would be redundant for the Commission to impose a restrictive channel occupancy limit in this proceeding. Rather, the Commission should adopt a unified approach which carefully considers the entire fabric of the 1992 Cable Act and its implementing Orders when establishing channel occupancy limits.

Worthy of particular emphasis in this regard are the strict program access rules the Commission recently adopted. The distinction the Commission makes in the Further Notice<sup>52</sup> between the program access rules as "narrowly tailored behavioral restraints" and the ownership provisions as "broader structural constraints" is at odds with the Commission's earlier description of the program access rules as embodying both "structural and

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<sup>51</sup> See, e.g., E! Entertainment at 2-3; Liberty Comments at 20; NCTA Comments at 27; Viacom Further Reply Comments at 4.

<sup>52</sup> Further Notice at ¶¶ 184, 210.

behavioral restrictions."<sup>53</sup> However, regardless of whether one characterizes them as primarily "structural" or "behavioral" in nature, both the program access and ownership provisions have the same primary objective of fostering effective competition and programming diversity.<sup>54</sup>

Legislators and Commissioners alike have characterized program access as the nucleus of the 1992 Cable Act. For example, in introducing the amendment that ultimately was adopted as Section 19 of the 1992 Cable Act, Congressman Tauzin described the program access provisions as "what many believe in this chamber and certainly on the subcommittee and committee to be the heart and soul of this legislation."<sup>55</sup> Similarly, the Senate

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<sup>53</sup> Notice at ¶ 52 (emphasis added).

<sup>54</sup> For a description of the purpose of the vertical ownership provisions, see Communications Act § 613(f)(1), 47 U.S.C. § 533(f)(1) ("In order to enhance effective competition, the Commission shall [set vertical ownership limits]; S. Rep. No. 92, 102d Cong., 1st Sess. 80 (1992) ("Senate Report") ("[S]ection 613(f)'s limit on vertical integration is ... designed to increase the diversity of voices available to the public"); Further Notice at ¶ 168.

For a description of the purpose of the program access provisions, see Communications Act § 628(a), 47 U.S.C. 548(a) ("Purpose - The purpose of this section is to promote the public interest, convenience, and necessity by increasing competition and diversity in the multichannel video programming market"); Program Access Order at ¶ 21 ("The program access requirements of Section 628 have at their heart the objective of releasing programming to the existing or potential competitors of traditional cable systems ....").

<sup>55</sup> 138 Cong. Rec. H6533 (daily ed. July 23, 1992) (statement of Rep. Tauzin).

Report characterized the program access provision as "crucial to the development of competition to cable."<sup>56</sup>

Further, in commenting on the program access order adopted by the Commission, Commissioner Duggan stated:

I have been something of a hawk on the issue of program access because I think it is a key to the fundamental aim of the cable reregulation effort and that is to make a transition to full, robust competition. Emerging delivery systems will not be able to emerge as fully competitive systems unless they do have access to programming.... [T]hough the spotlight will be on today's rate item, I consider the program access item to be of equal and perhaps of even greater importance for the well-being of emerging delivery systems and consumers....<sup>57</sup>

Finally, the Commission noted that in suggesting appropriate vertical limits commenters should consider "the other structural and behavioral restrictions included in Sections 12 and 19" since "these restrictions are similarly designed to prevent the adverse effects of vertical integration."<sup>58</sup> Because the central problem which both the vertical limits and the program access provisions were designed to prevent has already been substantially addressed by the adoption of what the Commission itself has characterized as "strict regulations to implement

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<sup>56</sup> Senate Report at 77.

<sup>57</sup> Oral statement of Commissioner Duggan on presentation of the program access item at the FCC's April 1, 1993 public meeting.

<sup>58</sup> Notice at ¶ 52 (emphasis added); Further Notice at ¶ 203. See also Further Notice at ¶ 210 (in addition to the channel occupancy limits, Sections 12 and 19 of the 1992 Cable Act were intended "to prevent discrimination by vertically integrated MSOs").

Section 19 of the 1992 Cable Act,"<sup>59</sup> the need for and benefits of restrictive vertical ownership limits have been eliminated.

**b. The Efficiencies Generated by Vertical Integration and the Unlikelihood of Successful Foreclosure Strategies Support a Channel Occupancy Limit of at Least 40%**

The overwhelming weight of Comments filed in this proceeding, as well as the legislative history of the 1992 Cable Act and prior Commission decisions, reflect widespread recognition that vertical integration in the cable industry has produced significant efficiencies in the distribution, marketing, and purchasing of programming, as well as substantial consumer benefits in the form of increased program diversity and quality.<sup>60</sup> The Further Notice expressly recognizes the assorted benefits associated with vertical integration in the cable industry.<sup>61</sup> In addition, in its Comments, TCI demonstrated that vertical and horizontal ownership are critical to the continued development of cable technology and the realization of a broadband telecommunications infrastructure.<sup>62</sup> TCI also

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<sup>59</sup> Further Notice at ¶ 210.

<sup>60</sup> See, e.g., Joint Comments of Cablevision and Comcast at 34-35; TCI Comments at 31; Time Warner Comments at 48-56; Viacom Further Reply Comments at 2; House Committee on Energy and Commerce, H.R. Rep. No. 102-628, 102d Cong., 2d Sess. 41 (1992) ("House Report"); Notice at ¶ 6.

<sup>61</sup> See Further Notice at ¶ 208.

<sup>62</sup> TCI Comments at 6-10.

noted that a high channel occupancy limit is consistent with well-established antitrust scholarship and jurisprudence.<sup>63</sup>

Moreover, the expert economic analysis prepared by Stanley M. Besen et al. strongly supports the adoption of a non-restrictive channel occupancy limit. The Besen analysis demonstrated that:

- Vertical integration between MSOs and cable program services lowers costs, leading to reduced prices and increased service quality to the viewing public.<sup>64</sup>
- Limiting vertical integration can increase production costs leading to reduced quality, and even discouraging the introduction of innovations such as digital compression by reducing the returns to innovative activity.<sup>65</sup>
- Foreclosure of a rival service by a vertically integrated MSO will not be profitable in most circumstances:
  - An MSO will be unable to damage a rival because the MSO is too small, because the rival service is profitable enough to withstand the loss of revenue, or because the rival service can protect itself by lowering input payments.<sup>66</sup>
  - Even if foreclosure could harm a rival service, it often would yield little or no payoff because the competing affiliated program service faces too

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<sup>63</sup> Id. at 33-34.

<sup>64</sup> Besen et al. at 23.

<sup>65</sup> Id. at 23-24. See also Time Warner Reply Comments at 32-38 for a description of the various negative effects of setting a vertical limit that is too low.

<sup>66</sup> Besen et al. at 28-36.



many remaining substitutes for it to be able to increase prices.<sup>67</sup>

- Even if the affiliated service could achieve gains, the costs that would have to be incurred to disadvantage a rival service often would be greater than the gains of the service.<sup>68</sup>
- Rival program services often may have effective counterstrategies to protect themselves from a foreclosure strategy.<sup>69</sup>
- The difficulties of pursuing a foreclosure strategy are further exacerbated by shared ownership of program services and MSOs. MSOs that share ownership in a program service could have conflicting interests in pursuing a foreclosure strategy because they would not share equally in the costs and benefits of the strategy (even assuming the strategy could succeed). Likewise, parties that share ownership in cable systems will have conflicting interests in a foreclosure strategy if they do not also hold shares of the same program services. Such partial ownership patterns are typical in the cable industry.<sup>70</sup>

Based on their findings, Besen et al. concluded that "as a result of the efficiencies generated by vertical integration and the difficulties of engaging in foreclosure, we favor relatively high channel occupancy limits."<sup>71</sup> No party in this proceeding submitted an economic analysis which undercuts the persuasiveness of this conclusion.

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<sup>67</sup> Id. at 36-37.

<sup>68</sup> Id. at 37-39.

<sup>69</sup> Id. at 39-41.

<sup>70</sup> Id. at 41-43.

<sup>71</sup> Id. at 4 (emphasis added).

## 2. Proponents of Low Vertical Limits Rely On Flawed Analyses

As TCI demonstrated in its Reply Comments, those arguing for a low vertical limit offer no basis or, in the alternative, a seriously flawed basis, for their severely restrictive ownership proposals. For example, MPAA makes no attempt to explain how its 20% vertical limit proposal -- a proposal that would require a radical restructuring of the cable business -- is consistent with the well-recognized efficiencies and consumer benefits generated by vertical integration. MPAA states no basis, cites no evidence, and offers no rationale for its burdensome proposal.

Similarly, INTV's proposal to freeze vertical ownership percentages at their current levels, with no future growth permitted, is unsubstantiated and anticompetitive. Behind each of INTV's proposals -- an absurdly low 10% limit on national horizontal ownership, far-reaching new limits on local and regional ownership, a freeze on vertical ownership, and a ban on expanded program investment by cable operators -- lies a desire for a sweeping, governmentally imposed immunity from competition for its member TV stations. The Commission should continue to disregard such groundless, self-serving proposals.<sup>72</sup>

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<sup>72</sup> In its Reply Comments, TCI also demonstrated why the proposals of CFA and David Waterman should be rejected. See TCI Reply Comments at 21-28. Much like the MPAA and INTV proposals, these commenters' recommendations rely on little more than weak and undisciplined theoretical models yielding arbitrary conclusions and should be rejected by the Commission.

**B. The Commission Should Exclude Minority, Local, and Regional Programming Services from the Channel Occupancy Limit**

Congress included a channel occupancy limitation in the Cable Act in order to promote diversity in the types of programming ultimately made available to subscribers. Congress recognized, however, that identifying the proper limits and quantifying the impact of such limits on program diversity was a complicated task. It therefore gave the Commission significant leeway to fashion limits that appropriately satisfy the underlying goal. The Commission correctly recognized in the Further Notice that when vertical limits have the effect of limiting diversity, they should be avoided. The Commission noted that vertical limits could produce such a negative effect on diversity with regard to minority, local, and regional program services. TCI agrees with the Commission's analysis.

**1. Minority Programming**

As noted above, the Commission has a long and consistent history of promoting the presentation of minority points of view. As the Commission has recognized, adequate representation of minority viewpoints enriches both minority and non-minority audiences and promotes the diversity which is a "key objective" of the Communications Act.<sup>73</sup> Exempting channels carrying minority programming from the channel occupancy limit would directly promote program diversity without significantly impinging on the objectives of the channel occupancy limit.

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<sup>73</sup> See 1978 Policy Statement at 981; see supra at 18-19.

By contrast, TCI respectfully submits that the failure to adopt a minority programming exception could threaten diversity for several reasons. First, channel occupancy limits might ultimately force a cable operator to remove minority-owned or targeted programming now or in the future. Second, such limits could create disincentives to cable operator investment in minority-owned or targeted programming. The Commission's proposed exemption for minority-owned or targeted programming would effectively eliminate these problems.

## **2. Local and Regional Programming**

The Commission's formal recognition of the need to promote minority programming and ownership stems back a quarter of a century. The recognition of the need to promote localism as a goal of federal communications policy goes back even further -- to the inception of the Communications Act itself. Chairman Quello has described localism "as the bedrock of the broadcasting service in this country" and a policy which "demands the careful attention of all of us charged with the responsibility of maintaining and improving the system."<sup>74</sup> In light of the central role localism has played in telecommunications policy, cable operators should be encouraged to invest in programming

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<sup>74</sup> In the Matter of Inquiry into the Development of Regulatory Policy in Regard to Direct Broadcast Satellites for the Period Following the 1983 Regional Administrative Radio Conference, 90 FCC 2d 676, 729 (concurring statement of Commissioner Quello); see also, Commissioner Ervin S. Duggan, Remarks Before the Association of Independent Television Stations (January 25, 1993) (describing localism as "one of the historic animating principles underlying broadcast regulation in this country.") available in 1993 FCC LEXIS 322.

that addresses the needs and interests of local and regional audiences.

However, the cable industry is well-positioned to provide an even greater amount of diverse and high quality local and regional programming. The industry's proven ability to provide niche programming targeted at narrow audiences makes local and regional programming a natural area for continued growth. For example, TCI believes that regional news services, produced by cable operators independently or in joint ventures with others, will proliferate over the next several years. The expanding channel capacity made possible by digital compression, fiber optics, and other technological advances further increases the potential for cable-created local and regional programming.

TCI believes that local and regional programming will undergo dynamic growth in the next several years. The Commission has properly proposed to avoid creating disincentives to such growth by exempting local and regional programming from the channel occupancy limits.

**C. The Commission Should Grandfather Existing Carriage Relationships from the Channel Occupancy Limit**

In promulgating new rules the Commission historically has been sensitive to "the possibility of disruption for the industry and hardship for individual owners" that retroactive application would produce.<sup>75</sup> The comprehensive nature and extraordinary

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<sup>75</sup> In the Matter of Amendment of Sections 73.34, 73.240 and 73.636 of the Commission's Rules Relating to Multiple Ownership of Standard, FM and Television Broadcast Stations, 50 FCC 2d 1046, 1078 (1975).

reach of the 1992 Cable Act unfortunately make a certain amount of industry disruption and hardship unavoidable. This makes it all the more incumbent upon the Commission to avoid causing disruption and hardship when it can do so consistent with the Act.

Grandfathering existing carriage relationships in the channel occupancy context is within the Commission's authority and is harmonious with both the purposes of the Act and its ownership provisions. Grandfathering minimizes disruption for cable operators and programmers by allowing them to avoid choosing between divestiture and program deletion. It also promotes subscriber satisfaction -- consistent with the consumer-oriented focus of the 1992 Act -- by minimizing the number of regulator-imposed channel lineup changes. This is a particularly important objective for the Commission to pursue given the adverse public reaction to program deletions necessitated by implementation of the Act's must carry requirements.

As the Commission observed in its Further Notice, grandfathering in the channel occupancy context takes "particular account of the market structure, ownership patterns and other relationships of the cable television industry."<sup>76</sup> TCI respectfully submits that grandfathering also enables the Commission's rules to meet the Act's requirement to develop rules

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<sup>76</sup> Further Notice at ¶ 237 (citing Communications Act § 613(f)(2)(C), 47 U.S.C. 533(f)(2)(C)).

that "reflect the dynamic nature of the communications marketplace."<sup>77</sup>

In grandfathering existing carriage arrangements, the Commission should use the date of adoption of its channel occupancy limits, not the effective date of the Act, as the relevant date for grandfathering purposes. The Act gives cable operators no guidance as to the possible extent of the channel occupancy limits. Accordingly, it would be unfair to penalize operators and programmers who entered into carriage agreements in the period between the Act's effective date and adoption of a channel occupancy limit. The Commission should hold true to its reasoning as expressed in the original Notice in this docket and "grandfather any existing vertical relationships which exceed the channel occupancy limits at the time such limits are adopted."<sup>78</sup>

**D. The Commission Should Use System Bandwidth For Purposes of Calculating Channel Occupancy Limits**

In the Notice, the Commission requested comment on how it should calculate channel occupancy limits in light of the rapidly advancing nature of cable and related technologies. In response, TCI noted that emerging technologies, such as digital video compression and fiber optics, are rapidly rendering obsolete the

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<sup>77</sup> Communications Act § 613(f)(2)(E), 47 U.S.C. § 533(f)(2)(E).

<sup>78</sup> Notice at ¶ 55 (emphasis added). The Commission does not offer any explanation for its proposal in the Further Notice to move the relevant date for grandfathering purposes to December 4, 1992. See Further Notice at ¶ 236.

conventional method of counting channels whereby each program service equals one channel.<sup>79</sup> Several cable operators have already agreed to purchase hundreds of thousands of digital compression boxes anticipating deployment in 1994.<sup>80</sup> Likewise, cable operators have already deployed significant amounts of fiber and announced plans for extensive additional fiber deployment.<sup>81</sup> TCI, for example, recently announced a \$1.9 billion plan to install 7,000 miles of fiber to build the national broadband telecommunications infrastructure. Of course, digital compression, fiber optics, and other technological advances will dramatically increase cable channel capacity and technical quality, thereby facilitating greater program diversity and expanded consumer choice in furtherance of longstanding FCC and Congressional goals.<sup>82</sup>

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<sup>79</sup> TCI Comments at 37-39.

<sup>80</sup> See, e.g., Mark Robichaux, "Need More TV? TCI May Offer 500 Channels," Wall Street Journal, December 3, 1992, at B1 (describing TCI's plans to introduce digital video compression by 1994); Fred Dawson, "Newhouse Makes Commitment to 250K Digital Boxes," Multichannel News, March 1, 1993, at 27; Chris Nolan, "Compression Standard," Cablevision, March 8, 1993, at 14 (Comcast agrees to purchase 150,000 General Instrument Corp.'s digital compression set-top boxes for 1994 deployment); Peter Lambert, "Sammons Joins DigiCable Parade, Orders 70K Boxes," Multichannel News, March 8, 1993, at 20; Peter Lambert, "Compression Beat Goes On: CVI Latest to Enlist," Multichannel News, March 15, 1993, at 24.

<sup>81</sup> See, e.g., "TCI to Spend \$1.9 Billion on Local Fiber Installations," Communications Daily, April 13, 1993, at 1-3; "Time Warner Plans Electronic Highway," Multichannel News, February 1, 1993, at 1.

<sup>82</sup> See, e.g., 1992 Cable Act §§ 2(b)(1)-(3).



Thus, it is necessary that the Commission implement the channel occupancy limit in a manner that is consistent with these new technological realities and, most importantly, does not discourage continued investment in such technologies.

TCI suggested that the best method for achieving Congress' goal of promoting diversity of programming while also sustaining cable operator incentives to invest in new technologies and innovative program services is to calculate channel occupancy limits based on system bandwidth.

Under this approach, the Commission would count each 6 MHz segment of bandwidth as a single unit for purposes of calculating channel occupancy limits, regardless of the number of program services transmitted over any given 6 MHz segment. Thus, for example, under the Commission's proposed 40% vertical ownership limit, a cable operator in a 35 channel (i.e., 35 x 6 MHz segment) system would be permitted 14 segments for distribution of affiliated programming.

In the Further Notice, the Commission solicited comment on TCI's bandwidth proposal.<sup>83</sup> TCI reiterates its support for the use of system bandwidth to calculate channel occupancy limits based on the legal and policy reasons stated below.

**1. As a Matter of Law, The Commission Must Use System Bandwidth to Calculate Channel Occupancy Limits**

At the heart of the Commission's inquiry into the calculation of channel occupancy limits is the definition of the

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<sup>83</sup> Further Notice at ¶ 183.

term "cable channel." Although some may contend that TCI's proposed definition of "cable channel" as a 6 MHz segment of bandwidth is a "new" approach, this contention is incorrect. TCI's spectrum bandwidth proposal merely elucidates Congressional and Commission precedent. Congress has already codified the definition of the term "cable channel" as:

a portion of the electromagnetic frequency spectrum which is used in a cable system and which is capable of delivering a television channel (as television channel is defined by the Commission by regulation).<sup>84</sup>

The term "television channel" has been defined by Commission regulation as:

a band of frequencies 6 MHz wide in the television broadcast band and designated either by number or by the extreme lower and upper frequencies.<sup>85</sup>

Combining these two definitions, a "cable channel" is "a portion of the electromagnetic frequency spectrum which is used in a cable system and which is capable of delivering ... a band of frequencies 6 MHz wide." Thus, TCI's definition of "cable channel" as a 6 MHz segment of bandwidth merely restates what Congress and the Commission have already defined via statute and attendant regulation.

Moreover, the definition of "cable channel" based on bandwidth is consistent with Commission regulations in other areas where "channel" is also defined as a unit of bandwidth. For example, the Commission used system bandwidth to define "AM

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<sup>84</sup> Communications Act § 602(4), 47 U.S.C. § 522(4) (emphasis added).

<sup>85</sup> 47 C.F.R. § 73.681 (emphasis added).

Broadcast Channel;"<sup>86</sup> "FM Broadcast Channel;"<sup>87</sup> and other types of channels.<sup>88</sup> Most recently the Commission endorsed a system bandwidth approach for purposes of defining "DBS Channel:"

We are initially inclined to count or "define" channels for purposes of triggering this obligation in terms of an explicit number of specified 24-MHz-wide channels for Part 100 licensees and in terms of the number of transponders and/or some multiples of 30-36 MHz used for video programming by Part 25 DBS providers.<sup>89</sup>

Thus, the "traditional" practice of equating "cable channel" with "programming service" has been more a simple consequence of analog technology's inability to transmit more than one programming service per 6 MHz of bandwidth than the purposeful result of a Congressional or Commission decree. Because only one programming service can "fit" into each 6 MHz segment of bandwidth in an analog world, it has become commonplace to refer to each programming service as a "cable channel." In this analog world, the commonplace usage and statutory definition of "cable channel" have been perfectly congruent. Conversely, in the

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<sup>86</sup> "The band of frequencies occupied by the carrier and the upper and lower sidebands of an AM broadcast signal with the carrier frequency at the center. ... The 117 carrier frequencies assigned to AM broadcast stations begin at 540 kHz and progress in 10 kHz steps to 1700 kHz." 47 C.F.R. § 73.14 (emphasis added).

<sup>87</sup> A "band of frequencies 200 kHz wide and designated by its center frequency...." 47 C.F.R. § 73.310 (emphasis added).

<sup>88</sup> See, e.g., definitions of "Main Channel" and "Stereophonic Channel" in 47 C.F.R. § 73.14.

<sup>89</sup> In the Matter of Implementation of Section 25 of the Cable Television Consumer Protection and Competition Act of 1992, Direct Broadcast Satellite Public Service Obligations, Notice of Proposed Rule Making, MM Docket 93-25, FCC 93-91 (released March 2, 1993) at ¶ 13.

rapidly emerging digital world, where more than one programming service can be compressed into each 6 MHz segment, the commonplace usage and statutory definition of "cable channel" diverge. Those arguing that in a digitally compressed world the Commission should equate "cable channel" with "programming service" are, in effect, urging the Commission to supplant the clear Congressional definition of this term cited above with an anachronistic, vernacular use. This, of course, the Commission cannot do.<sup>90</sup>

Finally, in response to the Commission's inquiry at ¶ 183 of the Further Notice, a system bandwidth approach is consistent with Congress' direction that the Commission establish a vertical ownership limit on "the number of channels." In fact, in light of the foregoing discussion regarding Congress' definition of a "cable channel" as a "portion of bandwidth" and the FCC's definition of "television channel" as a "band of frequency 6 MHz wide," Congress' reference to "the number of channels" could be more appropriately restated as "the number of bands of frequency 6 MHz wide."

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<sup>90</sup> See ACLU v. F.C.C., 823 F.2d 1554, 1567 (D.C. Cir. 1987), cert. denied, 485 U.S. 959 (1988) ("If the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress"); 2A Norman J. Singer, Sutherland Statutory Construction § 45.02 at 5 (5th ed. 1992).

**2. As a Policy Matter, The Commission Should Use System Bandwidth to Calculate Channel Occupancy Limits**

Defining "cable channel" as "a program service" in a digitally compressed environment simply will not work as a practical matter. Using system bandwidth will be more objectively precise and adaptable in the emerging world of digital compression.

**a. The Constant Fluctuations in Useable System Capacity Inherent in a Digitally Compressed Environment Necessitate the Use of a System Bandwidth Measurement**

The consequence of digital video compression is that the number of programs a cable system can deliver to the subscriber will vary from one day-part to the next based on the nature of the programming being transmitted at any given time. Whereas in the current uncompressed, analog world, a "36 channel cable system" can transmit up to 36 programs at any given time, in the digital realm a "36 channel cable system" might transmit 45 programs at 10 A.M., 120 programs at 4 P.M., and 200 programs at 8 P.M., all within the same day.

In order to understand the underlying cause of the constant fluctuations in effective system capacity associated with digital compression, first recall that the motion displayed in television pictures is actually the result of a perceptual trick. What the viewer perceives as motion is really a series of still pictures, or "frames," that are displayed at a rate of 30 per second. These sequential frames have substantial redundancy in them, that is, one frame looks a lot like the next in most cases. For

example, the display on a television screen of a network's logo is the result of absolutely identical frames transmitted 30 times per second.

Digital compression increases system capacity by eliminating the transmission of redundant picture elements. For example, in the case of the network logo, a digital compression system would transmit the first frame only and then instruct the receiver to repeatedly display subsequent frames by retrieving the initial frame from computer memory contained in the receiver's circuitry. This concept, known as "eliminating temporal redundancy," is at the core of digital compression. In essence, digital compression endeavors to minimize the number of digital "bits" of information that must be transmitted to represent the underlying video program. This is why compression is often referred to as "bit-rate reduction."

Of course, if the picture contains motion, the process becomes more complex. Consider, for example, the video images that comprise a fast-moving sporting event, such as a hockey game. Unlike the stationary network logo image, the hockey game is made up of minimally redundant, rapidly changing picture elements. As such, the hockey game is much more difficult to compress, since the more dynamic the type of programming, the higher the bit rate required to represent the underlying video. To compress the hockey game, the digital equipment not only must determine which picture elements are redundant from one frame to the next, but also must analyze the motion in a frame, predict

fairly accurately where objects will appear in the next frame (a process known as "motion estimation"), and transmit commands to the receiver's circuitry to rearrange previously stored redundant picture elements to best approximate and display the next frame. Finally, the compression system must transmit "cleanup bits" to correct for any errors in motion estimation.<sup>91</sup>

As the foregoing discussion illustrates, the level of compression achievable is dependent not so much on some universal compression algorithm inherent in the compression equipment, but on the nature of the programming being transmitted at any given time. For example, live sporting events may be compressed at a ratio of 4:1, whereas movies, which generally require a lower bit rate, may be compressed at a ratio of 8:1 or higher, thereby freeing up additional spectrum for other programming. As a result, the amount of programming transmitted over the cable system will fluctuate from one day-part to the next depending on the type of programming being transmitted. The Commission recently recognized the constant fluctuations in effective system capacity associated with digital video compression in the context of DBS:

We also must recognize that the amount of compression that can be accomplished within a single transponder channel will depend on the type of programming transmitted.<sup>92</sup>

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<sup>91</sup> For a more comprehensive primer on digital compression and transmission, see "Digital Compression and Transmission" by Craig K. Tanner, published by CableLabs, November 1992.

<sup>92</sup> DBS Notice at ¶ 13.

In light of the constantly expanding and contracting number of programs that can be transmitted at any given time using digital compression, an approach which defines each digitally compressed program as a "cable channel" could literally force an hourly recalculation of a cable system's channel occupancy limits.<sup>93</sup> Plainly, such an administrative nightmare was not intended by Congress and should not be imposed by the Commission.

Finally, in a digital world, the cable subscriber will no longer select a program for viewing by "tuning" to a predesignated, numerically labelled "channel number." Indeed, subscribers will be unaware of what channel frequency a program is "on." Rather, the subscriber, using an advanced handheld remote control, will interact with an on-screen, icon- and menu-based program guide to browse through various options and highlight the desired program, much like a WordPerfect user today navigates through files contained in the data directories on a PC's hard disk and highlights the document to be retrieved. This sophisticated, interactive program guide will also enable the subscriber to perform customized searches for particular types of programs, for example by allowing him/her to call up on the

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<sup>93</sup> In this regard, we note that the Commission's original proposal to require operators to certify annually their compliance with channel occupancy limits, see Notice at ¶ 55, would be rendered unintelligible were "cable channel" to be equated with "programming service." See also Further Notice at ¶ 242.



screen all the movies that are available for viewing, all the sports, news events, etc.<sup>94</sup>

In such a highly sophisticated, interactive environment, in which the old-fashioned tuner has been replaced by an array of integrated computer chips and accompanying software, equating "channel" with "program" becomes even more unintelligible.

**b. A System Bandwidth Approach to Calculating Channel Occupancy Limits Will Encourage Cable Operators to Invest in Emerging Technologies That Expand Consumer Choice**

A system bandwidth approach also will increase cable operator incentives to invest in the development of new technologies and innovative programming services. Cable operators should be free to use digital compression or other technologies to expand the capacity of their systems without triggering a recalculation of channel occupancy limits. The Commission should not, in effect, punish an operator for expanding its system's capacity by forcing a recalculation that might reduce its overall ability to distribute affiliated programming. This would discourage investment in digital compression and other technologies that expand consumer choice. As Besen et al. described it:

[L]imiting vertical integration can increase production costs, leading to reduced quality, and even discouraging the introduction of innovations such as

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<sup>94</sup> See Elizabeth Kolbert, "With 500 Channels, How Could Anyone Learn What's On," The New York Times, January 4, 1993, Section A at 1.